

REMARKS

After entry of the foregoing amendment, claims 27-49 and 51-83 are pending in the application.

All of claims 26-70 were earlier indicated as allowed, or allowable, except 26 and 50.

Claim 26 has now been canceled based on a re-appraisal of the claim in view of the prior art (e.g., the art submitted herewith). Applicant reserves the right to pursue claims similar to claim 26 in one or more related applications.

(The anticipation rejection of claim 26 in the Action is respectfully traversed. The cited art Schwab does not teach, e.g., “auxiliary data embedded within the audio signal.” Schwab’s auxiliary data is encoded in the picture information of a video signal.)

The obviousness rejection of claim 50 over O’Grady in view of Gniewek is respectfully traversed.

The cited teaching of Gniewek (col. 8, lines 27-61) concerns a physical break-away tab used in an audio cassette or video cassette housing to indicate that the media should not be written-to. He explains, e.g:

The physical indication of the write-once-only media type can be any one of the many physical devices used on a cassette or a cartridge that indicates a read only media. The indication must be a physical indication, such as a break-away tab of the standard video cassette recorder or audio cartridge, or any other indication located in any section physically on the cassette or cartridge case. The presence or absence of the break-away tab can be apparent to the user and can then be sensed by the WOO sensor 32 to indicate that this media and this cartridge is formatted for write-once-only operation.

(Emphasis added.)

The applicability of such a physical break-away tab to both audio and video cassettes does not fairly suggest to an artisan the radical reworking of O’Grady’s video signal processing technology that would be necessary to yield the audio-focused arrangement of claim 50.

Moreover, the Action seems to stretch too far in its reading of O’Grady. O’Grady is not understood to teach an artisan any decoding method that extends across plural video frames. The only reference to plural video frames cited in the Action (i.e., col. 2,

line 61) concerns placement of the data in different locations in different frames, so that fixed pattern noise does not become evident to a viewer.

Again, O'Grady's matched filter processing unit (68 and 70 in Fig. 2) does not produce an output based on more than a single frame. These elements process a group of 7050 samples – *less* than a frame (*i.e.*, 18.75 video lines), as indicated at column 5, line 37.

The Action cites column 1, lines 56-64 as disclosing a plurality of series, but no such teaching is apparent. Rather, this excerpt teaches that a single video signal (*i.e.*, an 18.75 line excerpt of a frame) is tested for correlation against plural different data waveforms. These plural waveforms are not the video signal – they are random noise waveforms (col. 1, line 48) that each represent a different a unique data word.

The Action also seems to argue¹ that a different frame of data is analyzed when a user changes the television channel (citing column 1, lines 6-22), thereby creating “a series of signals.” No such reference to channel changing is found in the cited excerpt. Moreover, it will be understood that O'Grady – over the course of its lifetime – may process many video frames. That is not the issue posed by claim 50. Rather, claim 50 concerns extracting “the multi-bit auxiliary data” by processing “a plurality of series of said encoded audio.”

Favorable reconsideration of this claim is solicited.

The objection to the specification (paragraph 3 of the Action) appears be to erroneous; it references claims 64-81 and 141-158. Prior to this amendment, the only claims pending in this application were 26-70.

Claims 51-64 were said to be “objected to” for dependence on a rejected base claim (paragraph 9 of the Action). However, each of these claims actually depends – directly or indirectly – from claim 47, which has been allowed. Accordingly, allowance of claims 51-64 is solicited.

New claims 71-83 are added to more fully protect applicant's inventive work.

New claim 71 is patentable because none of the art teaches or suggests the particular combination claimed, wherein the embedded signal is generated by transforming the pseudorandom reference data according to the auxiliary code, and is

¹ Action, top of page 7.

scaled according to characteristics of the audio signal to preserve the aural information without perceptible degradation.

New claim 72 is patentable because none of the art teaches or suggests the combination claimed, wherein calibration data is provided in the embedded signal to facilitate decoding of the auxiliary code.

New claim 73 is patentable because none of the art teaches or suggests the combination claimed, wherein the auxiliary code is embedded in the audio signal repeatedly, and the representation of the auxiliary code in the audio signal varies according to a key.

New claim 74 is patentable because none of the art teaches or suggests the combination claimed, wherein the embedding is such as to permit the auxiliary code to be recovered from the altered audio signal despite lossy compression of the altered audio signal.

New claim 75 is patentable because none of the art teaches or suggests the combination claimed, wherein the auxiliary code is embedded in the audio signal repeatedly such that recovery of the auxiliary code from the altered audio signal is improved by combining elements of the embedded signal in a process of decoding the auxiliary code.

New claim 76 is patentable because none of the art teaches or suggests the combination claimed, wherein the scaling comprises scaling the embedding signal as a function of the audio signal and as a function of a user adjustable scale factor.

New claim 77 is patentable because none of the art teaches or suggests the combination claimed, wherein pseudorandom reference data and an auxiliary code have been used to generate the embedded signal, the association between the embedded signal and the auxiliary code is indiscernible without availability of the reference data, the embedded signal has been generated by transforming the pseudorandom reference data according to the auxiliary code, and the embedded signal has been scaled according to characteristics of the the audio signal to preserve the aural information without perceptible degradation.

New claim 78 is patentable because none of the art teaches or suggests the combination claimed, wherein calibration data is used in the embedded signal to facilitate decoding of the auxiliary code from the altered signal.

New claim 79 is patentable because none of the art teaches or suggests the combination claimed, wherein the auxiliary code is embedded in the audio signal repeatedly, and a representation of the auxiliary code is varied in the audio signal according to a key.

New claim 80 is patentable because none of the art teaches or suggests the combination claimed, wherein the auxiliary code is recoverable from the audio signal after lossy compression of the audio signal.

New claim 81 is patentable because none of the art teaches or suggests the combination claimed, wherein the auxiliary code is repeatedly embedded in the audio signal, and the method includes combining elements of the embedded signal in a process of decoding the auxiliary code to improve recovery of the auxiliary code.

New claim 82 is patentable because none of the art teaches or suggests the combination claimed, wherein a compressed form of audio is processed to discern a steganographically encoded plural bit auxiliary code, where encoding of the auxiliary code in the compressed form was adapted to survive a lossy compression-decompression operation.

New claim 82 is patentable because none of the art teaches or suggests the combination claimed, wherein the ability of an apparatus to record the audio is limited, based on the discerned auxiliary code.

Favorable reconsideration and passage to issuance are solicited.

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Respectfully submitted,

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